This listing of the claims replaces all prior versions in the application.

In the Claims Listing:

1-30 (Canceled)

31. (Currently Amended) A method for selecting and/or determining customizable excitation signals for dispensing dry powders, comprising:

providing an elongate flow channel having a floor of piezoelectric material;

selecting an angle of orientation for the flow channel such that at least a portion of the flow channel angularly extends in a non-vertical, non-horizontal orientation in the axial direction;

providing a quantity of a target dry powder;

outputting a vibration excitation signal having a first carrier frequency from a signal generator to the piezoelectric material;

flowing the dry powder out of the flow channel;

outputting a vibration excitation signal having a second carrier frequency from the signal generator to the piezoelectric material; and

determining ~~the~~ a dispensing vibration excitation signal for the target dry powder that generates a repeatable and/or uniform fluid-like substantially non-agglomerated flow output based on flow data from the first and second vibration excitation signals.

32. (Original) A method according to Claim 31, further comprising adjusting the angle of orientation of the flow channel and determining a desired operational angle of orientation of the flow channel based on the angles used in the selecting and adjusting steps, the determined operational angle being below the static angle of repose of the target dry powder.

33. (Original) A method according to Claim 31, further comprising repeating the steps for a second target powder.

34. (Original) A method according to Claim 31, wherein the dry powder flow rate is reproducible to have variation that is less than about +/- 10%.

35. (Original) A method according to Claim 31, wherein the flow rate is reproducible to have variation that is less than about +/- 5%.

36. (Original) A method according to Claim 31, wherein the flow rate is reproducible to have variation that is less than about +/- 2%.

37. (Original) A method according to Claim 31, wherein the flow channel is disposed in a structurally rigid flow channel member, further comprising adjusting the size of a flow orifice extending above the piezoelectric material floor and below a cover member that overlies the floor and rests on the upper portion of the flow channel member by sliding the cover member forward or rearward over the flow channel member.

38. (Original) A method according to Claim 32, wherein the determining, altering and selecting steps are carried out by selecting an angle of orientation that is below the static angle of repose of the target dry powder under analysis and evaluating the flow of the dry powder at a plurality of different angles below the static angle of repose.

39. (Original) A method according to Claim 31, wherein the flowing step is controllably started and stopped by the application and removal, respectively, of the excitation signal to the piezoelectric material.

40. (Original) A method according to Claim 37, wherein the cover member has an elongate, axially-extending tip portion that has a downwardly extending length that varies over the axial length of the cover member to thereby project into the flow channel at different depths.

41. (Original) A method of dispensing a dry powder, comprising:

providing an elongate flow channel having a powder support floor formed of a flexible piezoelectric material and inlet and outlet ports;

directing a quantity of dry powder into the inlet port of the elongate flow channel;

vibrating the piezoelectric material with an electric excitation signal so that the piezoelectric material deflects upwardly; and

flowing the dry powder out of the outlet port responsive to the vibrating step.

42. (Original) A method according to Claim 41, further comprising adjusting the orientation angle of the elongate floor channel so that the flow channel angularly extends in a non-vertical, non-horizontal configuration and so that the outlet port is lower than the inlet port.

43. (Original) A method according to Claim 41, wherein the flowing step is carried out to serially dispense dose amounts of dry pharmaceutical powder(s).

44. (Original) A method according to Claim 43, wherein the flowing step is controllably started and stopped by the application and termination, respectively, of the electric excitation signal to the piezoelectric material.

45. (Original) A method according to Claim 41, further comprising tensioning the piezoelectric material in the flow channel.

46. (Original) A method according to Claim 45, wherein the tensioning step is carried out by securely clasping a portion of the piezoelectric material between a cover member and an underlying flow channel member and allowing the center floor portion of the piezoelectric material in the flow channel to be suspended above the bottom of the flow channel member.

47. (Original) A method according to Claim 46, wherein the vibrating step comprises applying the excitation signal voltage to the underside of the piezoelectric material.

48. (Currently Amended) A method according to Claim 41, wherein the excitation signal has a carrier frequency and a plurality of superpositioned modulating frequencies.

49. (Original) A method according to Claim 48, wherein the number of superpositioned modulating frequencies is at least three.

50. (Original) A method according to Claim 49, wherein the number of superpositioned modulating frequencies is four.

51. (Original) A method according to Claim 50, wherein the four modulating frequencies are in the range of between about 10-15Hz.

52. (New) A method according to Claim 31, wherein the determined vibration excitation signal comprises a carrier frequency modulated by a plurality of modulating frequencies.

53. (New) A method for selecting and/or determining excitation signals suitable for fluidly dispensing dry powders, comprising:

providing an elongate flow channel;

providing a quantity of a target dry powder in the flow channel;

vibrating the target dry powder in the flow channel with a first vibration excitation signal having a first carrier frequency and a first modulating frequency;

flowing the dry powder out of the flow channel using the fisrt vibration excitation signal;

vibrating the target dry powder in the flow channel with a second vibration excitation signal different from the first vibration excitation signal, the second vibration excitation signal having a second carrier frequency and a second modulating frequency;

flowing the target dry powder out of the flow channel using the second vibration excitation signal; and

determining a dispensing vibration signal for the target dry powder that comprises a carrier frequency and at least one selected modulating frequency that generates at least one of a repeatable or uniform fluid-like substantially non-agglomerated flow output using flow data of the target dry powder derived from the first and second vibration excitation signals.

54. (New) A method according to Claim 53, wherein the at least one modulating frequency of the dispensing vibration signal is a plurality of low frequency modulating frequencies.

55. (New) A method according to Claim 53, wherein the plurality of modulating frequencies of the dispensing vibration signal are superimposed.

56. (New) A method according to Claim 53, wherein the dispensing vibration signal is configured to dispense unit meted amounts of dry powder with about 5% or less dose to dose variation.

57. (New) A method according to Claim 56, wherein the dispensing vibration signal is configured to dispense unit meted amounts of dry powder with about 2% or less dose to dose variation.

58. (New) A method according to Claim 53, further comprising orienting the flow channel to angle downwardly in the direction of flow.

59. (New) A method according to Claim 53, wherein the flow channel comprises a piezoelectric member, and wherein the first and second vibrating steps comprise transmitting the respective first and second vibration excitation signals to the piezoelectric member which vibrates the target dry powder during the flowing steps.